What is claimed is:

1. A method of registering the position of an object moving in a target volume in an ultrasound imaging system, comprising:

capturing a first ultrasound image of a target volume;

capturing a second ultrasound image of said target volume; and

identifying the position of said object in said target volume using differences detected between said first and second ultrasound images.

2. The method of claim 1, wherein said identifying comprises:

generating a difference map from said first and second ultrasound images identifying said differences therebetween.

3. The method of claim 2, wherein said generating further comprises:

thresholding said differences to identify significant changes between said first and second ultrasound images.

4. The method of claim 1, wherein said first and second ultrasound images are two-dimensional ("2D").

5. The method of claim 1, wherein said first and second ultrasound images are three-dimensional ("3D").

6. The method of claim 5, wherein said identifying comprises:

generating a difference map of said differences detected between said first and second ultrasound images.

7. The method of claim 6, wherein said generating comprises:

thresholding said differences between said first and second ultrasound images to identify significant changes in image voxels.

8. The method of claim 7, wherein said object is a needle.

9. The method of claim 8, wherein said identifying further comprises:

filtering said difference map to identify voxels corresponding to a characteristic of said needle.

10. The method of claim 1, wherein said first ultrasound image is captured prior to entry of said object in said target volume.

11. The method of claim 1, wherein said first and second ultrasound images are not consecutive.

12. The method of claim 1, further comprising:

determining a region of interest in the target volume encompassing at least a portion of said object;

determining a segment of an operational scan range of a transducer of said ultrasound imaging system encompassing said region of interest; and

focusing said ultrasound imaging system on said segment of said operational scan range during image capture.

13. An ultrasound imaging system for registering the position of an object moving in a target volume, comprising:

a transducer for capturing a first ultrasound image and a second ultrasound image of a target volume; and

a processor for detecting differences between said first and second ultrasound images to identify the position of said object in said target volume.

14. An ultrasound imaging system according to claim 13, wherein said processor generates a difference map from said first and second ultrasound images identifying said differences therebetween.

15. An ultrasound imaging system according to claim 14, wherein said processor thresholds said differences to identify significant changes between said first and second ultrasound images.

16. A method of imaging using an ultrasound imaging system operable to capture image data from a target volume, comprising:

determining a region of interest in the target volume;

determining a segment of an operational scan range of a transducer of said ultrasound imaging system encompassing said region of interest; and

focusing said ultrasound imaging system on said segment of said operational scan range during image capture.

17. The method of claim 16, wherein said determining said region of interest comprises:

determining an area of expected activity of an object.

18. The method of claim 17, wherein said object is a needle.

19. The method of claim 18, wherein said region of interest is determined to correspond to the expected position of a tip of said needle.

20. The method of claim 19, wherein said region of interest includes an area along a trajectory of said needle beyond said tip.

21. The method of claim 16, wherein said determining of said region of interest includes the expected position of a needle in said target volume.

22. The method of claim 16, wherein said transducer is a rotational transducer.

23. The method of claim 22, wherein said determining of said segment of said operational scan range comprises:

determining an angular sector of said operational scan range of said rotational transducer.

24. The method of claim 16, wherein said focusing comprises:

capturing image data in said segment of said operational scan range at a greater scan density than outside of said segment of said operational scan range.

25. The method of claim 16, wherein said focusing comprises:

capturing image data only in said segment of said operational scan range.

26. An ultrasound imaging system, comprising:

a transducer for capturing ultrasound images of a target volume; and

a processor for determining a region of interest in the target volume, for determining a segment of an operational scan range of said transducer encompassing said region of interest, and for directing said transducer to focus on said segment of said operational scan range.

27. An ultrasound imaging system according to claim 26, wherein said processor determines an area of expected activity to determine said region of interest.

28. An ultrasound imaging system according to claim 26, wherein said transducer is a rotational transducer.

29. An ultrasound imaging system according to claim 28, wherein said processor determines an angular sector of said operational scan range of said rotational transducer.

30. An ultrasound imaging system according to claim 26, wherein said processor directs said transducer to capture image data in said segment of said operational scan range at a greater scan density than outside of said segment of said operational scan range.

31. An ultrasound imaging system according to claim 26, wherein said processor directs said transducer to capture image data only in said segment of said operational scan range.